

WHAT IS CLAIMED IS:

1. A molding technique for copper interconnecting wires by electrochemical displacement deposition on the pre-shaped metal layer comprising the following steps:

5 step 1: preparing a silicone wafer that is used as a substrate;

 step 2: forming a wet oxide on the substrate by a stove in high temperature;

 step 3: forming a layer of Si_3N_4 and used as a
10 corrode-proof layer;

 step 4: adding N_2 into a sputtering apparatus to form TiN on the corrode-proof layer having a thickness about 100 Å and used as a adhering layer;

 step 5: forming a layer on the adhering layer in the
15 sputtering apparatus and used as a sacrificial layer, the adhering layer being used to enhance the connection between the sacrificial layer and the corrode-proof layer;

 step 6: patterning the sacrificial layer and cutting the unnecessary portion relative to the copper interconnecting wires,
20 wherein the patterned sacrificial layer in used as a mold for displacement and amassing the copper interconnecting wires;

 step 7: mixing a reaction solution;

 step 8: putting the substrate with the mold into the

reaction solution; and

step 9: taking the substrate from the reaction solution and then the copper interconnecting wires are formed on the substrate due to the mold on the sacrificial layer.

5 2. The molding technique as claimed in claim 1, wherein the sacrificial layer is formed of Ti.

3. The molding technique as claimed in claim 1, wherein sacrificial layer is formed of Ta.

4. The molding technique as claimed in claim 1, wherein the
10 sacrificial layer is patterned by lithography.

5. The molding technique as claimed in claim 1, wherein the sacrificial layer is patterned by photolithography etching.

6. The molding technique as claimed in claim 1, wherein the sacrificial layer is formed on the adhering layer by sputtering.

15 7. The molding technique as claimed in claim 1, wherein the reaction solution contains 40 milliliters hydrofluoric acid (BOE) and 4 grams cupric sulphate (CuSO_4) in one liter deionized water.

8. The molding technique as claimed in claim 6, wherein the sacrificial layer has a thickness about 3000 Å.

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